

Amendment
Serial No. 10/621,588

IN THE CLAIMS

Please amend the claim as follows:

1. (Currently Amended) A broadcast/communication unified passive optical network system, comprising:

an optical line termination configured to time-division multiplex received digital broadcast signals, to receive communication signals from an electronic network, configured to wavelength-division multiplex the time-division multiplexed digital broadcast signals and the communication signals, and configured to transmit the wavelength-division multiplexed signals;

a plurality of optical network units coupled to the optical line termination, each of said optical network units configured to wavelength-division demultiplex the wavelength-division multiplexed signals received from the optical line termination, configured to time-division demultiplex the time-division multiplexed digital broadcast signals, and configured to output a subset of the time-division demultiplexed digital broadcast signals selected in accordance with a subscriber control signal and the communicating signals; and

a plurality of setup boxes coupled to each-one of the plurality of optical network units, each of the plurality of setup boxes configured to receive the wavelength-division demultiplexed and time-division demultiplexed broadcast signals and the wavelength-division demultiplexed communication signals from corresponding optical network unit and configured to send subscriber control signals input by the subscriber to the corresponding optical network unit;

wherein the optical line termination comprises: a first and a second format converter configured to format-convert the digital broadcast signals from a moving image format into a time-division multiplexing (TDM) format; a first time-division multiplexer configured to time-division multiplex the format-converted digital broadcast signals; a distributor configured to

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receive broadcast signals from the electronic network; and a first wavelength-division multiplexer being coupled to the first time-division multiplexer, being configured to wavelength-division multiplex the communication signals and the time-division multiplexed digital broadcast signals that is also format converted, and being configured to transmit the wavelength-division multiplexed signals to the optical network units over an optical fiber.

2. (Original) The system according to claim 1, wherein the received digital broadcast signals is an MPEG2 multi-program transport stream.

3. (Original) The system according to claim 1, wherein the electronic network is the Internet.

4. (Cancelled).

5. (Original) The system according to claim 3, wherein the TDM format is in accordance with a synchronous digital hierarchy/synchronous optical network (SDH/SONET) standard.

6. (Currently amended) A broadcast/communication unified passive optical network system, comprising:

an optical line termination configured to time-division multiplex received digital broadcast signals, to receive communication signals from an electronic network, configured to wavelength-division multiplex the time-division multiplexed digital broadcast signals and the communication signals, and configured to transmit the wavelength-division multiplexed signals;

a plurality of optical network units coupled to the optical line termination, each of said

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optical network units configured to wavelength-division demultiplex the wavelength-division multiplexed signals received from the optical line termination, configured to time-division demultiplex the time-division multiplexed digital broadcast signals, and configured to output a subset of the time-division demultiplexed digital broadcast signals selected in accordance with a subscriber control signal and the communicating signals; and

a plurality of setup boxes coupled to one of the plurality of optical network units, each of the plurality of setup boxes configured to receive the wavelength-division demultiplexed and time-division demultiplexed broadcast signals and the wavelength-division demultiplexed communication signals from corresponding optical network unit and configured to send subscriber control signals input by the subscriber to the corresponding optical network unit.

~~The system according to claim 4,~~ wherein the optical line termination further comprises: a first and a second local processor configured to remultiplex the broadcast signals to the format converter; a buffer configured to store signals received from the VOD server; a first E/O converter configured to convert the format-converted digital broadcast signals provided from the time-division multiplexer; and a second E/O converter configured to convert the communication signals provided from the distributor.

7. (Previously Presented) The system according to claim 1, wherein each of the plurality of optical network units comprises:

a second wavelength-division multiplexer configured to wavelength-division demultiplex the signals received from the optical line termination;

a second time-division multiplexer configured to time-division demultiplex the demultiplexed broadcast signals;

a format converter configured to convert the broadcast signals having a time-division

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multiplexing format into a moving image format and to output the format-converted signals;

a controller configured to transmit only the broadcast signals selected from the format-converted signals in accordance with a subscriber control signal to the setup boxes; and

a distributor configured to output the subscriber control signal to the controller and to transmit the demultiplexed communication signals to the setup boxes.

8. (Previously Presented) The system according to claim 7, wherein each of the optical network units further comprises:

a first O/E converter configured to convert and output the digital broadcast signals among the demultiplexed optical signals provided from the second wavelength-division multiplexer;

a second O/E converter configured to convert and output the communication signals among the demultiplexed optical signals provided from the second wavelength-division multiplexer;

a third O/E converter configured to convert and output the communication signals inputted through the optical fiber;

a first frequency converter configured to output the signals provided from the controller after converting the frequency thereof into a first intermediate frequency signal;

a second frequency converter configured to output the signals inputted from the distributor after converting the frequency thereof into a second intermediate frequency signal;

a signal combiner configured to combine the signals provided from the first and second frequency converters; and

a third E/O converter configured to convert the signals provided from the signal combiner through the optical fiber.

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9. (Previously Presented) The system according to claim 1, wherein each of the setup boxes comprises:

a signal separator configured to separate the signals received over the optical fiber into broadcast signals and communication signals; and

a hub configured to output the communication signals provided from one of a VOD player, a computer and an HDTV to a corresponding subscriber terminal, the hub further configured to receive communication signals including a subscriber control signal for changing broadcast channels from the subscriber terminal.

10. (Previously Presented) The system according to claim 9, wherein each of the setup boxes further comprises:

a fourth O/E converter configured to convert the signals provided from the optical fiber;

a first and a second frequency converter configured to downconvert the broadcast signals and the communication signals from an intermediate frequency to a baseband frequency; and

a fourth E/O converter configured to E/O convert and transmit the communication signals through the optical fiber.

11. (Currently amended) A broadcast/communication unified passive optical network system, comprising:

an optical line termination configured to time-division multiplex received digital broadcast signals, to receive communication signals from an electronic network, configured to wavelength-division multiplex the time-division multiplexed digital broadcast signals and the communication signals, and configured to transmit the wavelength-division multiplexed signals;

a plurality of optical network units coupled to the optical line termination, each of said

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optical network units configured to wavelength-division demultiplex the wavelength-division multiplexed signals received from the optical line termination, configured to time-division demultiplex the time-division multiplexed digital broadcast signals, and configured to output a subset of the time-division demultiplexed digital broadcast signals selected in accordance with a subscriber control signal and the communicating signals; and

a plurality of setup boxes coupled to one of the plurality of optical network units, each of the plurality of setup boxes configured to receive the wavelength-division demultiplexed and time-division demultiplexed broadcast signals and the wavelength-division demultiplexed communication signals from corresponding optical network unit and configured to send subscriber control signals input by the subscriber to the corresponding optical network unit,

~~The system according to claim 4,~~ wherein the optical line termination further comprises a first E/O converter directly coupled to the first time-division multiplexer and the first wavelength-division multiplexer.

12. (Previously Presented) The system according to claim 1, wherein the optical line termination is directly coupled to signal sources.